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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/537,791

06/06/2005

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EXAMINER

WINNER, TONY H

ART UNIT

PAPER NUMBER

3611

MAIL DATE

DELIVERY MODE

10/20/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/537,791	Applicant(s) YASUDA ET AL.	
	Examiner Tony H. Winner	Art Unit 3611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 July 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) _____ is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 9-15 is/are rejected.
- 7) ☒ Claim(s) 16 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 June 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>6/6/05</u> . | 6) <input type="checkbox"/> Other: _____ |

Election

1. Applicants elect species I with traverse is acknowledged. The traverse is on ground of an improper restriction under 35 U.S.C. 121. The office apologizes for an administrative oversight when applying standard 35 U.S.C. 121 instead of PCT Rules 13.1 and 13.2. Therefore, the restriction is hereby withdrawn. An action on the merits follows.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 9-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murakami et al. (USPN. 6,550,567 B2) in view of Nishimura et al. (USPUB. 2002/0039460).

Murakami discloses a power assist unit for providing steering assist power to a wheel steering mechanism, the steering mechanism including a steering shaft (2), said power assist unit comprising:

- a. a motor (6) including an output shaft (60), said motor providing rotational motion;
- b. a worm gear mechanism (7) for reducing the rotation power and outputting the rotation power as said steering assist power;

- c. said worm gear mechanism further comprising:
 - i. a housing (8) connecting to said motor;
 - ii. a worm (71) disposed within said housing, said worm including first and second shaft ends, said first shaft end connecting to the output shaft of said motor, said worm including a gear section;
 - iii. a worm wheel (figure 4) engaged with said worm gear section, said worm wheel being connected to the steering shaft;
 - iv. first and second bearings (10, 11) disposed in said housing, said first bearing supporting said first shaft end of said worm and said second bearing supporting said second shaft end of said worm; and
said first bearing being a deep-groove ball bearing, said bearing including an inner ring, an outer ring, and a bearing ball, said inner ring and said outer ring each including a racetrack groove;
 - v. said housing includes a large-diameter section (figure 4) surrounding said first shaft end of said worm and a small-diameter section surrounding said second shaft end of said worm, said large and small diameter sections being separated by a step (84) in said inner peripheral surface of said housing;
 - vi. said power assist unit further comprising a threaded lid (9), said threaded lid being threaded into the large-diameter section of said housing.

Murakami lacks the teaching of an inner ring racetrack groove includes a curvature radius of between 52.5% and 75% of the diameter of said ball.

Nishimura discloses a rolling bearing device wherein to improve durability over a long period of time, the inner curvature radius is set at 52% or greater.

Therefore, it would have been obvious to one skilled in the art to modify the steering system of Murakami to include the bearing as taught by Nishimura, for the reasons set forth above.

Regarding claims 10-11 and 13-15, Murakami as modified by Nishimura discloses all of the claimed limitations.

Allowable Subject Matter

3. Claim 16 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

4. Any inquiry concerning this communication or earlier communication from the examiner should be directed to Anthony H. Winner whose telephone number is (571) 272-6654. The examiner can normally be reached on Monday-Friday from 9:30 am to 6:30 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lesley Morris, can be reached at (571) 272-6651. The fax phone number for the organization where this application or proceeding is (571) 273-8300.

Art Unit: 3611

5. Information regarding the status of an application may be obtained from the Patent Application Information-Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll free).

6. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-6584.

/Tony H. Winner/
Primary Examiner, Art Unit 3611
October 10, 2008